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invention. Claims 5, 6 and 17 have been cancelled without prejudice. Claims 1 and 13 are in independent form. Favorable reconsideration is requested.

The Office Action rejected Claims 1-3, 7, 13, and 18, under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art in view of U.S. Patent No. 5,467,210 (Kishigami). In addition, the Office Action rejected Claims 4, 6, 15, and 17 under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art in view of Kishigami and further in view of U.S. Patent No. 5,311,341 (Hirai).

Applicants submit that independent Claims 1 and 13 are patentably distinct from the cited prior art for at least the following reasons.

Claim 1 is directed to a circuit connection structure. The structure includes a first substrate that forms a display panel that has electrode terminals formed thereon. A semiconductor device has first electrodes and second electrodes with the first electrodes being directly connected to the electrode terminals of the first substrate. A flexible wiring member is disposed in a lateral position with respect to the first substrate having thereon a pattern of conductors, each extending from a first conductor end to a second conductor end on the flexible wiring member with the first conductor ends of the conductors connected to the second electrodes of the semiconductor device. A circuit board is disposed with a space from the first substrate and has electrode terminals connected to the second conductor ends of the conductors on the flexible wiring member. The semiconductor device bridges the space between the first substrate and the circuit board. The second conductor ends of the conductors on the flexible wiring member are connected to the electrode terminals of the circuit board, and the output electrodes of the semiconductor device are connected to the electrode terminals on the at least one substrate of the display

panel, respectively, with an anisotropic conductive adhesive.

Applicants initially wish to point out that the connection structure shown in Figure 4 of Kishigami, and relied upon in the rejection, is the same as the prior art connection structure discussed at page 3, line 7 to page 4, line 14 of the instant specification.

Further, the position was taken in the Office Action that Figure 13 of the instant application shows the feature "wherein said semiconductor device bridges the space between the first substrate and the circuit board. However, Applicants do not understand that this conclusion can be drawn from Figure 13. Kishigami fails to remedy this deficiency of prior art Figure 13. As shown in Kishigami's Figures 1 and 4, Kishigami shows a semiconductor device fully disposed on a display panel substrate. Thus, neither reference teaches the bridging disposition of the semiconductor device giving the advantages discussed in the previous response. Moreover, in view of the above, Kishigami would not have motivated one of ordinary skill in the art to connect only one of the input and output electrode of the semiconductor device to the display panel substrate and leaving the other for connection with a circuit board.

While the unamended claims are believed patentable, to expedite prosecution, Claim 1 has been amended to recite that the second conductor ends of the conductors on the flexible wiring member are connected to the electrode terminals of the circuit board, and the output electrodes of the semiconductor device are connected to the electrode terminals on the at least one substrate of the display panel, respectively, with an anisotropic conductive adhesive. The common use of an anisotropic adhesive for connection of both an input end and an output end of a preliminarily bonded structural unit of the flexible wiring member and the driver facilitates quick and high-density connection

with the circuit board and the display panel structure.

While Hirai teaches use of an anisotropic conductive adhesive, it fails to teach or suggest the use of such an anisotropic conductive adhesive for bonding two different conductor ends of an electrical unit as a bridging connection structure over to two different types of substrates. Of course, Hirai fails to remedy the above-mentioned deficiencies of the prior art references mentioned above.

Applicants submit that a combination of Applicants prior art and Kishigami, assuming such combination would even be permissible, would fail to teach or suggest the features of Claim 1.

The aspect of the present invention set forth in Claim 13 is directed to a display apparatus. The apparatus includes a display panel that is made up of at least one substrate that has pixel electrodes which extend to form electrode terminals on a peripheral side of the substrate. A semiconductor device has input electrodes and output electrodes for supplying drive waveforms to the pixel electrodes of the display panel. A circuit board is disposed with a space from the display panel and has electrode terminals for supplying an electric power and control signals to the semiconductor device. The electrode terminals on at least one substrate of the display panel are directly connected to the output electrodes of the semiconductor device and the semiconductor device is connected to the circuit board via a flexible wiring member that is disposed in a lateral position with respect to the substrate that has a pattern of conductors, each extending from a first conductor end to a second conductor end so that the input electrodes of the semiconductor device are connected to the first conductor ends of the conductors on the flexible wiring member. The second conductor ends of the conductors of the flexible wiring member are connected to the electrode terminals of the circuit board, and the semiconductor device bridges the space between the display panel and the circuit board. The second conductor ends of the

conductors on the flexible wiring member are connected to the electrode terminals of the circuit board, and the output electrodes of the semiconductor device are connected to the electrode terminals on the at least one substrate of the display panel, respectively, with an anisotropic conductive adhesive.

For reasons similar to those discussed above with reference to Claim 1, Applicants submit that a combination of Applicants' prior art and Kishigami would fail to teach or suggest a display apparatus as recited in Claim 13. Claim 13 has been amended similarly to Claim 1 and is believed even more clearly patentable for the reasons discussed above with respect to the added feature.


Accordingly, Applicants submit that Claims 1 and 13 are patentable over the cited art, and respectfully request withdrawal of the rejection under 35 U.S.C. § 103(a).

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,


Attorney for Applicants
Registration No. 38,586

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200
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NY_MAIN 221476 v 1

VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

1. (Thrice Amended) A circuit connection structure, comprising: a first substrate forming a display panel having electrode terminals formed thereon, a semiconductor device having first electrodes and second electrodes with the first electrodes ^{4a} directly connected to the electrode terminals of the first substrate, a flexible wiring member disposed in a lateral position with respect to the first substrate having thereon a pattern of conductors each extending from a first conductor end to a second conductor end on the flexible wiring member with the first conductor ends of the conductors connected to the second electrodes of the semiconductor ⁵ device, and a circuit board disposed with a space from the first substrate and having thereon electrode terminals connected to the second conductor ends of the conductors on the flexible wiring member,

wherein said semiconductor device bridges the space between the first substrate and the circuit board, and

the second conductor ends of the conductors on the flexible wiring member are connected to the electrode terminals of the circuit board, and the first electrodes of the semiconductor device are connected to the electrode terminals of the first substrate, respectively, with an anisotropic conductive adhesive.

13. (Thrice Amended) A display apparatus, comprising:

a display panel comprising at least one substrate having thereon pixel electrodes extending to form electrode terminals on a peripheral side of the substrate,

a semiconductor device having input electrodes, and output electrodes for supplying drive waveforms to the pixel electrodes of the display panel, and

a circuit board disposed with a space from the display panel and having electrode terminals for supplying an electric power and control signals to the semiconductor device; wherein

the electrode terminals on at least one substrate of the display panel are directly connected to the output electrodes of the semiconductor device, and

the ⁵semiconductor device is connected to the circuit board via a flexible wiring member disposed in a lateral position with respect to the substrate having thereon a pattern of conductors each extending from a first conductor end to a second conductor end so that the input electrodes of the semiconductor device are connected to the first conductor ends of the conductors on the flexible wiring member, and the second conductor ends of the conductors of the flexible wiring member are connected to the electrode terminals of the circuit board,

wherein said semiconductor device bridges the space between the display panel and the circuit board, and

the second conductor ends of the conductors on the flexible wiring member are connected to the electrode terminals of the circuit board, and the output electrodes of the semiconductor device are connected to the electrode terminals on said at least one substrate of the display panel, respectively, with an anisotropic conductive adhesive.